

copying the captured signal representing video imagery to said non-volatile memory.

Support for these limitations are found throughout the text, but more specifically on: page 5, line 25 et seq.; page 6, line 25 et seq.; page 7, first paragraph; and in Drawing, Fig. 3.

Claim 1 now includes applicant's two-tier digital memory data capture architecture wherein the first tier includes capturing the sensor data, including video data, in a volatile, random-access memory configured as a continuous-loop buffer. This volatile memory captures the data in a first-in, first-overwritten manner.

The second tier of applicant's digital memory data capture architecture includes a non-volatile memory. After the desired data is captured in the volatile, random-access memory, the data is transferred to the non-volatile memory.

This two tier digital memory data capture architecture is novel and non-obvious in view of the prior art and offers advantages over the prior art.

KIKINIS stores the sensor data directly into flash memory. This has several disadvantages. Flash memory cannot be recorded into as fast as can volatile memory. Therefore, flash memory has speed limitations that come into play when dealing with real-time events. These time constraints limit the quality and quantity of information stored, especially video information, as it requires a large amount of data. Another disadvantage of using flash memory, as the initial digital data storage device is that flash memory has limitations on the number of cycles it can be overwritten before becoming error prone. With flash memory, this cycle time limits the useful life of the product, in some applications perhaps to a year or less.

With applicant's claimed two-tier digital memory data capture architecture, even assuming flash memory as the second tier instead of another slower, more permanent memory, this cycle time would not be reached until ten thousand events are recorded. Other components will fail before this many events are encountered.

Additionally, writing to permanent memory uses significantly more power and generates more heat than does writing to volatile memory. Since the claimed device is a "vehicle-mounted device", the vehicle must supply the operating power. Particularly, when a device is being operated directly off the vehicle battery, writing directly into permanent memory will consume more power and drain the battery faster.

Since the claimed device is a "vehicle-mounted device", heat is a problem. Excessive heat will cause electrical components of the nature used in the device to fail or malfunction. Devices of this nature are commonly mounted inside a vehicle on the window such that the sun commonly bears directly on the device and heats the device. The device and components get particularly hot when a vehicle is parked in the sun. The extra heat generated by writing directly into permanent memory may cause or will contribute to heat-related failure.

Hill does not use the claimed two-tier digital memory data capture architecture of applicant's invention. Like, KIKINIS, HILL only uses a permanent memory storage. Hill does not use a memory over-write system but stores all on: "a magnetic tape included in a removable cassette. In other embodiments, the mass storage device 30 can be a solid-state flash memory card or other removable memory mediums that store data. Examples are 2.5 and 3.5 inch removable disk drives..."

Thus, the system of HILL has at least the limitations on storage, as does KIKINIS, and, has additional limitations in that, mechanically rotated mediums, such as magnetic tape and floppy disks, are susceptible to damage in accidents.

WADA does not show or describe storage devices.

JOHNSON, likewise, stores data directly into non-volatile memory.

LEE does not discuss storing the data.

None of the references, either singly or in combination, disclose or teach the claimed invention of Claim 1, nor is it obvious therefrom. In view of the amendment and remarks, Claim 1 is seen to be in condition for allowance and allowance is requested.

Claims 2-16 being dependent upon now-allowable Claim 1 and including further patentable subject matter are also seen to be in condition for allowance and allowance is requested.

The other independent Claims 17, 33, 36, and 39 have been amended to include the added amended matter of Claim 1. These claims are now seen to be in condition for allowance for the reasons cited above and allowance is requested.

The claims dependent upon claims 17, 33, 36, and 39, reciting further patentable subject matter and being ultimately dependent upon a now-allowable base claim, are also seen to be in condition for allowance and allowance is requested.

In view of the Amendment and remarks, Claims 1 – 41 are seen to be in condition for allowance and allowance is requested.

The examiner is requested to contact the undersigned at (619) 234-4034 if it will aid in the disposition of this application.

A REQUEST FOR EXTENSION OF TIME and fee therefore are attached.

Sincerely,



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